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ABSTRACT

The ANISA model of education (D. Streets and D. Jordan) classifies curriculum content into four areas--the physical environment, the human environment, the unknown environment, and the self--and encourages horizontal integration between content areas. The ANISA model holds that the process of learning consists of differentiation, integration, and generalization. The teacher's role is to help the learner achieve process as well as content goals, thus teaching the child to become a competent learner. While noting that the model is a carefully thought out comprehensive theory, this critical review uses the area of language acquisition to question ANISA assumptions about how humans learn, and discusses another model of learning presented by Joseph Chilton Pearce which maintains that the learner creates an inner model of outer stimuli according to his or her developmental constraints. This inner model is successively refined as the learner gains experience. Pearce's model differs from the ANISA model in that the learner's working theory of "how it all works" provides the categories for classifying incoming data. While the ANISA framework is a model of the linear sequential thinking prevalent in the Western world, the changing paradigms of modern science may be closing the door on scientism, and the capacity of the ANISA model to incorporate these changing paradigms will be the measure of its viability. The Alexander Indian Reserve, near Edmonton, Canada, has based its school philosophy on the ANISA model with dramatic results: attendance has doubled, vandalism has dropped, academic scores have risen, and community involvement has increased from 15 to 500 parents and friends attending home and school nights. (TD)

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ED 400 126

ISSUES IN NATIVE EDUCATION

THE ANISA MODEL OF EDUCATION:

A Critique

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A Compacted Summary of the ANISA Model

The work of the late Dr. Daniel Jordan and his colleague Dr. Donald Streets provides an interesting example of a recent attempt to formulate a comprehensive theory of curriculum. Because the ANISA model of education, as their work is commonly known, so clearly lays out its conceptual framework, it can usefully be investigated in terms of the theory of human development upon which it is based and in terms of its internal consistency.

The author's claim for their work is unequivocally expressed in their response to Schwab's pronouncement that the field of "curriculum is moribund" (Schwab, 1970:1). They write of their own work

> A philosophical basis, broadly conceived, has served to inspire a developmental theory that makes possible the creation of a comprehensive curriculum with emphasis on both content and process and a comprehensive guide to teaching to fit the curriculum. This coherent body of theory represents the kind of significant breakthrough—a fresh vision—that curriculum theorists and pedagogues in the most pessimistic moments predict cannot happen for a hundred years. We believe this new direction, which may take a hundred years to implement fully and refine, can functionally and structurally provide the means of insuring the fullest expression of the infinitude of man's potentialities... (Streets and Jordan, 1973: 40)

Let us take a closer look at this theory and see if it warrants such optimism.

Human beings, the ANISA model states, can be described by their endless capacity to actualize potentialities. Because human capacity is not restricted to genetic structures or to the selective pressures of the environment, but is created through the interaction of the human organism with these two sources of influence, potentiality is virtually limitless, the ANISA theorists argue. Indeed, the limit of human capacity can never be

known. The process of becoming creates ever new potential. The image is of a journey to the end of the rainbow. As we approach the horizon of one vantage point, the horizon recedes ever before us, creating a new outer limit to our vision of where we must travel.

This view of human development as a process of endless becoming is further supported by the ANISA belief that human beings are essentially spiritual begins, "the pinnacle of creation" (Ibid:30). The process of development or of actualizing potentials, therefore, involves a relationship with the "unknowns and the unknowables—the ultimate mysteries in the cosmos of which consciousness enables us to be aware, even if we do not know what constitutes them..." (Ibid:33).

Besides interacting with this "environment of unknowns and unknowables," human beings actualize potential through contact with the physical (mineral, vegetable and animal) environment, the human environment, and the Self (a reflection of the other three environments in a particular human being). These environments comprise the ANISA model's basic classification of the content of curriculum. The subject areas they generate can be summarized as follows:

1. The physical environment can be studied through such subject areas as mathematics, the natural sciences, natural history and technology.

2. A study of the human environment would entail a study of language and communication, the social sciences, human relations and ethics.

3. The unknown environment can be approached through art, aesthetics, philosophy and religion.

4. Knowledge of the Self includes body awareness, self-perception, self-concept, self-esteem, self-determination,

> physical health, the social self and the ideal self. ANISA theorists claim that this latter category, knowledge of the self, is one area in which they have been able to make a substantial contribution, since the traditional curriculum has little to offer in this regard.

Aside from this emphasis on knowledge about the self, the ANISA model claims to differ from many other systems in that it provides the mechanism for and encourages horizontal integration between the content areas of the curriculum. An example that is cited is the possible link between the study of biology and music through a common emphasis on the process of classification. If the emphasis is on the process by which information can be acquired in both these fields, as well as on the information it-self, the students will be able to transfer competence in how to learn from one subject area to another, say the authors.

The ANISA model of education does not stop with an articulation fo the content of curriculum but also pays considerable attention to the process of curriculum. Here again an attempt is made to provide a comprehensive organization of the process by which learning takes place. This process, it is claimed, consists of three essential steps: differentiation, integration, and generalization. Jordan and Streets define these steps as follows

> Learning competence—knowing how to learn—is the ability to differentiate aspects of experience, whether internal or external, integrate them into a new whole, and generalize the whole t different situations. Differentiation, integration and generalization thus comprise the common denominator of all types of learning reflected in the different categories of potentialities. (Ibid:30)

These steps are equally valid, claim ANISA theorists, whether we are speaking about language acquisition or learning to ride a bike.

Differentiation would involve breaking down experience into contrastable elements (phonemes in the one case or muscular movements in the other); integration involves the creation of a patterned whole (words or sentences, coordinated muscular activity); and generalization involves the capacity to apply the integrated pattern to other similar situations (the generation of novel utterances, riding a mountain bike as well as a racing bike). The ANISA model stresses the necessity of gaining a conscious ability to use these processes to achieve learning competence.

The basic categories of human potentiality or competence to which these processes can be applied are outlined in the ANISA model as:

1. Psychomotor competence - "the capacity to coordinate, control, and direct the movement and position of voluntary muscles" (Ibid:31) in such subprocesses as balance, posture, locomotion, manipulation, receipt, contact and propulsion.

2. Perceptual competence - "the ability to differentiate sensory information and to integrate that information into generalizable patterns which constitute interpretations of reality that enable one to make meaningful decisions and to act on them" (Ibid) in such areas as sight, hearing, smell, taste, the cutaneous senses, and vestibular senses.

3. Cognitive competence - the development of internal structures through such processes as analysis, synthesis, classification, seriation, number relations, deductive and inductive inference, interpolation, extrapolation, analogy, and conservation.

4. Affective competence - "the ability to organize one's emotion and feelings in a way that supports and facilitates the release of further potentiality" by "inhibiting, coping with, managing and facilitating emotions in terms of a sense of purpose or subjective aims" (Ibid:32).

5. Volitional competence - "the ability to form ultimate aims, differentiate them into operable goals, and integrate them into a perpetual flow of intentional behavior directed toward achieving those goals" through such subprocesses as "attention, goal-setting, self-arousal, perseverance, effecting closure, and fantasizing a state of goal attainment) (Ibid:33).

With this background, we can appreciate the definition of curriculum put forth by the ANISA theorists.

> Curriculum as we define it, is comprised of two interrelated sets of educational goals and what children do, usually with the help of peers and adults, to achieve those goals. One set of goals concerns information (content) to be learned. Culture is the source of the information, the organization of which rests on the classification of environments, and includes three basic symbol systems (mathematics, language, and art) used to convey that information. The other set of goals concerns process and rests on a classification of the potentialities of the human organism and the means by which those potentialities become actualized. Achieving the two sets of goals (content and process) results in the emergence of a personal identity—a Self, which through gaining mastery over its environment and over the process of its own becoming, can take charge of its own destiny, the over riding purpose of the ANISA model. (Ibid:30)

The role of the teacher in such a conception of curriculum would logically be to facilitate the student's interaction with the environment in such a way that she will both gain competence as a learner (process goals) and assimilate information about the environments (content goals). This includes both arranging the environments and guiding interaction.

Streets and Jordan provide the following examples of factors in the environment which the teacher can manipulate: deficiencies (e.g. in therms of the developmental appropriateness or quantity of materials), light, temperature, sound, ventilation, the introduction of novelty, and social

grouping. Examples of how the educator can guide interaction with the environment include: active or passive intervention, using activity to generate goals or using goals to generate activity, discerning whether a particular child has mastered process or satisfactorily assimilated content, allowing discovery or providing information as instructional techniques, and the organization of time and space, etc. This type of systematic thinking does not preclude spontaneity, however. ANISA teachers are also expected to be able to capitalize on fortuitous events for pedagogical ends.

Each arrangement of the environment or each guided interaction between student and environment would consciously be chosen by the teacher according to its capacity to facilitate learning competence. Some teacher choices would be geared to fostering differentiation, others integration, and still others generalization. ANISA recommends that teachers be well trained in developmental theory so that more accurate diagnoses can be made as to the exact process the student is lacking competence in. The ultimate goal, however, is for the student to become more and more accurate in diagnosing her own needs and more sophisticated in arranging her own environments. The mature learner is an independent learner, a teacher of self.

The ANISA model of education is certainly an ambitious attempt to build a comprehensive theory of curriculum in a very systematic way. Streets and Jordan accept as their guideline the following conditions for developing a curriculum theory:

> When a comprehensive curriculum theory is built, it will have to take into account not only the learning methods and teaching methods ("strategies of instruction" and the like), but also the knowledge to be learned, the nature of the student who will learn it, and the nature of the societal responsibility shared by

> teacher and student. For if education is a moral affair before it is a technical affair, then the grounds for moral behavior have to be incorporated in one's theory of educational action. (Foshay and Beilin, cited in Streets and Jordan, 1973:29)

A Wobbly Leg in the ANISA Model

The ANISA contribution to educational thought is considerable. Their work serves as a fine example of a comprehensive theory in that the philosophical underpinnings are carefully thought out and meticulously articulated. This is building from the bottom up and we can understand clearly the goals, objectives and methods as they are presented because the assumptions upon which they are based are so clearly expressed. The scope of this critique does not allow me to follow all the tentacles of ANISA thought into educational administration, teacher training, the role of nutrition in education, or specific exercises for developing identified competencies. A scanning of the titles of ANISA articles and curriculum documents points, however, to an attempt to apply the ANISA perspective to all aspects of educational theory with exemplary thoroughness.

This type of internal consistency makes it very easy to be swept along with the logic of the model. The point at which the model is vulnerable, therefore, is at the level of its foundation assumptions. I have little trouble with the ANISA view of man, simply because it is one I happen to share. Where I have questions is with the ANISA model of how human beings learn. The whole ANISA model hinges on the theory that human beings learn by ordering experience in a very logical way through differentiation, integration and generalization.

If we examine this model of learning in terms of just one universal but complex area of human learning, language acquisition, a number of

questions are immediately raised. The ANISA model would suggest that children will best learn language by being exposed to selective data which would enable them to learn how to rapidly differentiate between various phonemes. After these phonemes were mastered, they could be combined (or integrated) into patterns (words, sentences) and applied to a variety of different situations. Indeed, the ANISA reading curriculum attempts just such a progression.

The logical extension of this model would be to have caretakers speak to young children in just [m]s and [n]s, for example, until they got the hang of nasals and before moving on to fricatives. No parent in her right mind would consider such a nonsensical approach. Because it is not phonemes children are learning when they are learning to speak. It is meaning. They do not move from the parts to the whole but rather from a whole to a more refined whole. Children learn language when they are surrounded by the rich data of normal human interaction. Indeed, recent research (Condon and Sander, 1974) indicates that children have already learned the rhythm of language before they are born.

Early speech, although it may sound like a product of differentiation, is again really a response to the whole. Telegraphic speech, as linguists call phrases like "aw gone" or "daddy home" are a distillation of meaning to conform with the productive capacities of the speaker. "Aw gone" commonly means "My bottle is empty. I'd like some more." The abbreviated version carries the whole message, not just a small part. And who would dare to tell the toddler who confidently utters a string of nonsense syllables with the perfect inflection of declaratives, interrogatives or exclamations, that she is not talking!

A model of learning that accounts for the data presented by language acquisition much more elegantly than the differentiation-integration-generalization sequence is presented by Pearce in his Magical Child and Magical Child Matures. Pearce's model is very similar to the psycholinguistic model, although the terminology varies. It describes the process whereby the learner creates an inner model of outer stimuli according to the developmental constraints (or blueprint, as Pearce calls it) of the learner. This inner model is successively refined as the learner gains experience.

Here again a three-stage theory of learning is proposed:

1. the creation of a conceptual "container" for the information through the development of a rough theory of "how it all works;"

2. the sorting out of the information into meaningful categories on the basis of that theory; and

3. practice and variation.

An important way in which this model differs from the ANISA model is that in it the working theory of "how it all works" held by the learner provides the categories for the classification of incoming data. The ANISA model claims that the differences found during the learner's process of differentiation provide the basis for the theory of the whole. Pearce's model, on the other hand, stresses the completeness of the learner's theory of "how it all works" at any one stage. What distinguishes adult speech from childish speech is the extent to which the model has been refined by accumulated experience and by the changing perspective of the learner.

"Errors" in childish speech do not represent a missing part that the child has not yet been able to differentiate, integrate and generalize, but rather a working model that fails to take into account certain details. The child who says, "I goed to the store" does not lack the concept of past tense, but is overgeneralizing his rule for forming past tenses. The difference is an important one. Pearce's "magical child" never lacks a model for language. From the moment the child has the basic biological mechanisms for perceiving sound, after the second trimester in the womb, she had mastered the parts (phonemes, morphemes, syntax, semantics and pragmatics) and could then move on to integrate them into whole speech.

The ANISA theory can be used very effectively to describe an end product of learning such as language. Language can indeed be described on the basis of its parts, the integration of those parts into larger wholes and the application of those wholes in a variety of situations. We have a large number of grammars of the English language that do just that. It is just that these descriptions have almost nothing to do with what human beings actually do when they produce speech. The confusion between the phenomenon itself and a description of it is a common error, and one that has led to endless frustration for students and teachers alike as they lock horns over grammar texts. Children seem to know intuitively that the study of grammar has almost nothing to do with talking. It is quite possible to have an elegant description of a phenomenon and still be no closer to an understanding of the process by which that phenomenon occurs.

Having called into question one of the foundation blocks of the ANISA model, does the entire edifice come crashing down like a domino tower whose bottom has been snatched from under it? Not necessarily so.

Children seem to learn in spite of our best efforts to teach them. They survive the many fads that sweep through the field of education and influence the type of experience students will have in the classroom. It sometimes seems that they do what they do, no matter how we describe what it is we think they are doing.It would therefore not be fair to examine the ANISA model from a theoretical perspective only. I feel it is important to acknowledge the not inconsiderable success of the one school that purports to be based on it.

A Working Model of the ANISA Theory of Education

The Alexander Band (situated just north and west of Edmonton) chose the ANISA model on which to base its school philosophy after its school board considered many options. They chose this model, they say, because of its emphasis on integration between the subject areas and because of its comprehensive plan to educate the whole child. ANISA trained teachers (from National city University in San Diego's Master of Education program) form a significant portion of the staff and other staff members have received considerable training in the model through workshops.

An extensive and thoughtful evaluation would be required to determine to what extent the successes at Alexander are in any way attributable to the ANISA model. Nevertheless the transformation is dramatic. Attendance has almost doubled, vandalism has dropped to near zero, and academic scores have risen several grade points a year in many instances. Classrooms are colorful and lively places where children are encouraged to experience concepts in active and novel ways. Teachers provide supportive environments for children to explore many aspects of

their lives and to share with others in a trusting way. Community involvement in the school has increased from fifteen to five hundred parents and friends attending home and school nights.

When a student of that school was recently killed in a hunting accident, the school did not proceed with a business-as-usual functionalism. Nor did the school shut down for the day because virtually everyone in the community was deeply affected by the tragedy. Rather each teacher sought ways to express her own feelings and to support the students in their efforts to come to terms with their own grief and fear. The incident became a part of the curriculum, as it would unavoidably be anyway, in a conscious way that allowed personal growth to occur and trust to develop.

The chairperson of the school board in the Alexander community shared the many benefits she felt the school had gained from its association with the ANISA model of education in a recent conversation with me. One of the most important of these, she said, was the framework it provided for the community to evaluate, in a systematic, detailed, and ongoing way, their own dream of what the school could become. The school board and school staff feel that they have a frame of reference from which to examine any new curriculum package, staff member, or administrative decision.

Summary

The ANISA model, then, would seem to have significance for the field of curriculum on both a theoretical and practical level. On a theoretical level, Streets and Jordan have built a theory of curriculum from the bottom up, by beginning with a clear articulation of their philosophical biases. In this regard their work can be compared with that of great educators such as Maria Montessori or Rudolf Steiner. They then go on to

enunciate their understanding of what these assumptions would mean for educational practice. Their methodical work of some twenty years' duration was interrupted by the untimely and brutal murder of Dr. Jordan just over three years ago. The work of outlining their "process curriculum" had just begun, with tentative lesson plans having been developed for the psychomotor and volitional competencies.

This beginning is sufficient, however, to indicate the trend that these works were following. Each process area is broken down into subprocesses (e.g. psychomotor competence consists of balance, posture, locomotion, manipulation, receipt, contact and propulsion, according to the ANISA perspective). each subprocess, in its turn, is developed through exercises designed to take students through the differentiation-integration-generalization process believed to be the key to mastery.

I must admit that the predictability of this treatment brings out the rebelliousness in me. I'm sure I'd be tempted to do things backwards one day, just out of perversity! The individual lessons, however, are often sensitively treated, with a conscious attempt to build in active student involvement and to develop techniques that allow equal access to all students regardless of their development stage. The lessons in the psychomotor area, for example, never have literacy or other cognitive skills as a prerequisite.

The content curriculum has not, to my knowledge, been articulated by ANISA educators. The ANISA teachers in Alberta use the content of the Alberta curriculum at this point in time, concentrating on the ingenuity with which they treat the subject areas. Their expressed goal, however, is to develop ANISA content curriculum in the next few years, beginning with the "basic subjects" such as mathematics and language arts.

If we do not fault the ANISA model for this incompleteness, which is due in large measure to Dr. Jordan's death and the upheaval which resulted from its tragic nature, we still have a theoretical framework which is remarkable for its thoroughness and clarity. As such, it can justifiably be studied on the same footing as the Waldorf and Montessori models. It is scientism at its best. The field of curriculum has been meticulously dissected; each part has been faithfully examined and analyzed; and the parts have been reassembled in the optimistic hope that the whole has somehow been captured.

My objections to this type of model, especially when it attempts to describe how learning occurs, has been dealt with in the body of this critique. In spite of this very basic difference concerning the nature of human learning, I find the ANISA framework fascinating as a model of the linear sequential thinking so prevalent in the western world. The changing paradigms of science which are being championed by such articulate thinkers as Prigogine and Capra, however, just may be closing the door on the tidy world of scientism. An interesting measure of the viability of the ANISA model will be its capacity to incorporate and adapt to the changing paradigms of modern science.

On the practical level, the ANISA model is still in its infancy. Its day-to-day development continues at the Kipohtakaw Education Center on the Alexander Reserve. A number of other schools in Canada, primarily in Native communities, claim to be influenced by the work of Jordan and Streets, although they have not attempted a complete restructuring of their school according to ANISA theory.

This limited based of data does allow some generalizations. The emphasis on meeting the needs of individual students and on active learning

contribute to a dynamic educational experience and to an increased sense of personal worth for students. Students at the Alexander Reserve report a feeling of ownership for the school and frequently come to school on Wednesday afternoons when there are no classes while teachers develop new curriculum materials and advance their own skills. Perhaps most notably, the ANISA model managed to provide a comprehensive framework which allowed the educational system of at least one community to undergo radical transformation of virtually every aspect of school life in a healthy, integrated manner. That same community will undoubtably contribute a great deal in turn to the articulation of a viable and practical expression of the ANISA model.

It is only right, then, that we should give the last word to the people of Alexander who, realizing that "the children of the Alexander Indian Reserve were in serious education trouble" (Kipohtakaw Education Center, undated:1), took the following words of Alfred North Whitehead to heart:

> In the conditions of modern life the rule is absolute, the race which does not value trained intelligence is doomed. Not all your heroism, not all your wit, not all your victories on land or at sea, can move back the finger of fate. Today we maintain ourselves. Tomorrow science will have moved forward one more step, and there will be no appeal from the judgement which will then be pronounced on the uneducated. (Whitehead, cited in Kipohtakaw Education Center, undated:4)

The people of Alexander go on to attribute their new vision of the capacity of their people to participate meaningfully in society to their choice of the ANISA model for the basis of a new educational system.

> The opportunity to become a competent learner is one of the greatest gifts a child can receive. It is a great gift because learning competence enables a child to take full advantage of all other opportunities life may bring. And if life seems to

bring few opportunities and many problems, a competent learner need not despair because he can work through problems and knows how to create opportunities for himself and others. (Kipohtakaw Education Center, undated:5-6)

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